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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/594,170	06/15/2000	Helmut Rudigier	622HE/48982	8885

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EXAMINER	
ROJAS, OMAR R	
ART UNIT	PAPER NUMBER
2874	

DATE MAILED: 08/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/594,170	RUDIGIER, HELMUT	
	Examiner	Art Unit	
	Omar Rojas	2874	

-- The MAILING DATE of this communication appears on the cover sheet with th correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *July 21, 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *1-9,12-22 and 24-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-9,12,13,16,20,24 and 26-30* is/are rejected.

7)☒ Claim(s) *3,14,15,17-19,21,22 and 25* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☒ The proposed drawing correction filed on *21 July 2003* is: a)☒ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Pri rity under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

1. With regards to the amendment filed on July 21, 2003, all the requested changes to the claims have been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1 and 24 have been considered but are moot in view of the new ground(s) of rejection.

Drawings

3. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on July 21, 2003 have been approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102/103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1-3, 5, 6, 12, 13, 16, and 20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Patent No. 5,420,946 to Tsai.

Regarding claims 1, 6, and 13, Tsai discloses an optical fiber switch (see Figs. 2 & 7) having a support/body (124) with a highly reflective layer for establishing a mirror surface, wherein the mirror surface is arranged on a swiveling switch body (130) having

a cuboid shape; wherein the support/body (124) is arranged on the switch body (130) in a surface-flush manner in a recess (18).

Tsai appears to only differ from claims 1, 6, and 13 in that Tsai is silent as to whether the support (124) is made of glass.

However, Tsai does describe an alternative reflective support (24) as a "front surface coated mirror." Id. at col. 3, ll. 22-23.

Furthermore, it was well known in the art at the time of the claimed invention to use glass plates with reflection film coatings in the particular field of endeavor (small mirrors for laser applications). See, for example, European Patent Application EP 0 695 954 A1 to Honeywell, Inc. ("Honeywell") et al. at column 2, lines 49-60.

Thus, if the support (124) disclosed by Tsai does not inherently comprise glass, it would be obviously expedient to use glass since Honeywell is evidence that glass was a conventional material used in the fabrication of mirrors/reflectors for laser applications in general.

Therefore, if a glass support body were not already inherent in Tsai, it would have been obvious to one of ordinary skill at the time of the claimed invention to obtain the invention specified by claims 1, 6, and 13 in view of Tsai and Honeywell.

Regarding claim 4, the examiner incorporates the previous remarks concerning claim 1, which reveal that it would either be inherent in Tsai or obvious to use glass in the reflector body (124) of Tsai. Therefore, Tsai further differs from claim 4, in that the thickness of the glass reflector (124) is not expressly disclosed as being within the recited range of claim 4. However, finding the optimum thickness for the glass reflector

support (124) of Tsai would be considered an obvious design choice, perhaps involving some routine experimentation. Thus, if the thickness of the reflector (124) in Tsai is not inherently within the ranges recited by claim 4, it would be obvious for one of ordinary skill in the art to determine an optimum size/thickness for the reflector which falls within the claimed ranges through routine experimentation. Therefore, it would have been obvious to one of ordinary skill at the time of the claimed invention to obtain the invention specified by claim 4.

Regarding claim 12, the examiner incorporates the previous remarks concerning claim 1 and further notes that Tsai is silent as to the material of the switch body (130).

However, if the material of the switch body (130) were not inherently a material that can be cast or injection molded, it would be obviously expedient to use such a material in Tsai for purposes of mass production.

This is because many metals (i.e., aluminum, iron, etc.) can be cast and many types of plastics, in general, can be injection molded. Casting and injection molding are known to be desirable processes in the mass production of manufactured devices. Therefore, materials which can be adapted for such processes would be desirable to one of ordinary skill in the art.

Therefore, it would have been obvious to one of ordinary skill at the time of the claimed invention to obtain the invention specified by claim 12 if the recited limitations are not inherently present in Tsai.

Regarding claims 2, 5, 16, and 20, the examiner incorporates the previous remarks and further notes that the applicant(s) is claiming the product including the

process of making the optical switch, and therefore claims 2, 5, 16, and 20 are of "product-by-process" nature. The courts have been holding for quite some time that the determination of the patentability of product-by-process claim is based on the product itself rather than on the process by which the product is made. *In re Thorpe*, 77 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985). Patentability of claim to a product does not rest merely on a difference in the method by which that product is made. Rather, it is the product itself which must be new and unobvious. Applicant has chosen to claim the invention in the product form. Thus, a prior art product which possesses the claimed product characteristics can anticipate or render obvious the claimed subject matter regardless of the manner in which it is fabricated. A rejection based on 35 U.S.C. section 102 or alternatively on 35 U.S.C. section 103 of the status is eminently appropriate and acceptable. *In re Brown and Saffer*, 173 USPQ 685 and 688; *In re Pilkington*, 162 USPQ 147.

6. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsai as applied to claim 1 above, and further in view of U.S. Patent No. 6,310,737 to Gillich et al. ("Gillich").

Regarding claims 7-9, Tsai does not expressly disclose using a protective layer as specified by claims 7-9. However, Gillich in a related disclosure teaches the benefits of using a protective layer made of SiO_2 (i.e., silicon oxide) which is vacuum deposited over a metallic reflective layer. Note col. 1, ll. 54-67 of Gillich. Since the invention of Gillich has applicability to reflector bodies in general (see Gillich, col. 2, ll. 24-30), the ordinary skilled artisan would have found it obvious at the time of the claimed invention

to use the teachings of Gillich to modify Tsai in order to provide a protective layer for the reflective layer of Tsai, thereby obtaining the invention specified by claims 7-9.

7. Claims 24 and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsai as applied to claim 1 above, and further in view of Honeywell.

Regarding claims 24 and 26-29, the previous remarks concerning claim 1 are hereby incorporated.

Tsai does not expressly disclose making his reflector (124) by cutting it out of a glass plate provided with a reflective layer, using a thickness of between 0.1 mm and 0.5 mm, using Au, Ag, or Al for the reflective layer, or using a protective layer.

Honeywell, on the other hand, teaches manufacturing small mirrors for laser applications by providing a reflective coating on a glass plate (10), cutting mirrors out of the glass plate, and using a protective coating layer (21). Id. at col. 2, ll. 49-60, col. 3, ll. 26-35, and col. 4, ll. 21-26.

The ordinary skilled artisan would have wanted to apply the teachings of Honeywell to Tsai in order to "reduce the labor content of mirror fabrication" and "decrease defect density in mirrors." See Honeywell at col. 1, ll. 31-29.

Furthermore, as discussed with regards to claim 4, finding an optimum thickness for the reflector support (124) of Tsai that falls within the claimed ranges would have been an obvious design choice.

Lastly, It is well known to use reflective layers of Au, Ag, or Al in mirrors, in general.

Therefore, it would have been obvious to one of ordinary skill at the time of the claimed invention to obtain the invention specified by claims 24 and 26-29 in view of Tsai and further in view of Honeywell.

8. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsai in view of Honeywell as applied to claim 29 above, and further in view of Gillich.

Regarding claims 30, Tsai in view of Honeywell does not expressly disclose using a protective layer as specified by claim 30. However, Gillich in a related disclosure teaches the benefits of using a protective layer made of SiO_2 (i.e., silicon oxide) which is vacuum deposited over a metallic reflective layer. Note col. 1, ll. 54-67 of Gillich. Since the invention of Gillich has applicability to reflector bodies in general (see Gillich, col. 2, ll. 24-30), the ordinary skilled artisan would have found it obvious at the time of the claimed invention to use the teachings of Gillich to modify Tsai in view of Honeywell in order to provide a protective layer for the reflector (124) of Tsai, thereby obtaining the invention specified by claim 30.

-Allowable Subject Matter

9. Claims 3, 14-15, 17-19, 21-22, and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 3, 14, 15, 17-19, and 25, each of the claims appear to positively recite a totality of features which define an unobvious optical switching device in view of the aforementioned prior art.

Regarding claims 21-22, since these claims are dependent on claim 17, they are allowable for the same reasons given for claim 17.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6,275,626 to Laor discloses a prior art optical switch having a glass body arranged on a swiveling switch body.

12. Since the Gillich and Tsai references cited in the instant Office action were provided in a previous Office action, no copies thereof are being submitted with this Office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar Rojas whose telephone number is (703) 305-8528 and whose e-mail address is *omar.rojas@uspto.gov*. The examiner can normally be reached on Monday-Friday (7:00AM-3:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hemang Sanghavi, can be reached on (703) 305-3484. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722 for regular communications. The examiner's personal work fax number is (703) 746-4751.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Omar Rojas
Patent Examiner
Art Unit 2874

or
August 10, 2003

HEMANG SANGHAVI
PRIMARY EXAMINER